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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/787,303

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Takashi Tomiyama

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EXAMINER

LAMBELET, LAWRENCE EMILE

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/787,303

Applicant(s)

TOMIYAMA ET AL.

Examiner

Lawrence Lambelet

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oki et al (U.S. Patent 4,825,249), and further in view of Cahill et al (U.S. Patent 3,387,071).

Oki et al, hereafter "Oki", discloses a process for producing a cleaning blade reading on claim 1. Oki teaches providing a urethane cleaning blade for use with a photoelectronic copying machine and coating it with a mixture which includes an isocyanate compound to deliver wear resistance and lubricating properties. See lines 60-68 in column 1 and 58-63 in column 3. Oki further teaches that the isocyanate compound is caused to react (cure) on the surface of the urethane substrate with unreacted elements thereon. See lines 31-46 in column 2.

Oki teaches that the coating is applied by dipping (impregnating, immersing), as required by claims 1 and 3. See lines 38-43 in column 3.

Oki does not teach removing excess compound with warm or hot air having a temperature sufficient to render the compound flowable, as required by claim 1.

Sasame further does not teach removing excess isocyanate compound with a solvent, as required by claim 2.

Cahill et al, hereafter "Cahill", teaches forming a urethane object, in this case a fiber, by using an excess of an isocyanate compound and removing this excess with hot air in reference claims 4 and 5. Herein Cahill refers to excess extender, making reference to the reaction functionality of the isocyanate. Using a temperature above the melting point of the isocyanate compound, thereby maintaining flowability for the purpose of sheeting the fluid, would have been obvious as a matter of choice to one skilled in the art. Also, it would have been obvious as a matter of choice for one skilled in the art to follow up the hot air doctoring with a solvent to insure the complete removal of isocyanate from the surface.

Oki and Cahill are combinable because they are concerned with a similar technical field, namely, urethane compositions. One of ordinary skill in the art at the time of the invention would have found it obvious to include in the method of Oki the isocyanate removal process, as taught by Cahill. The motivation to do so would have been to prevent deterioration of lubricating properties by any unreacted end reactive groups remaining. See lines 53-55 in column 3 of Oki.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oki in view of Cahill, as applied to claims 1-3 above, and further in view of Limerkens et al (U.S. Patent 5,840,782).

Oki/Cahill teach the method of claims 1-3, as discussed above.

Oki/Cahill do not teach urethane water content of 1% by weight or less, as required by claim 4.

Limerkens et al, hereafter "Limerkens", teaches water content of a polyisocyanate/polyol system (urethane) at 0.3-1.2% by weight in reference claim 14 and at lines 57-67 in column 2.

Oki/Cahill and Limerkens are combinable because they are concerned with a similar technical field, namely, urethane compositions. One of ordinary skill in the art at the time of the invention would have found it obvious to include in the method of Oki/Cahill the water content of Limerkens, and would have been motivated to do so to slow or stop additional reaction.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oki in view of Cahill, as applied to claims 1-3 above, and further in view of Suzuki et al (U.S. Patent 4,980,108).

Oki/Cahill teach the method of claims 1-3, as discussed above.

Oki/ Cahill do not teach deactivating excess unreacted isocyanate with an active hydrogen compound which does not cause further cross-linking, as required by claim 5.

Suzuki et al, hereafter "Suzuki", neutralizes a urethane containing unreacted isocyanate with aqueous ammonia at lines 50-65 in column 6.

Oki/Cahill and Suzuki are combinable because they are concerned with a similar technical field, namely, urethane compositions. One of ordinary skill in the art at the time of the invention would have found it obvious to include in the method of Oki/Cahill the neutralization of excess isocyanate, as taught by Suzuki, and would have been motivated to do so to prevent deterioration of lubricating properties. See lines 53-55 in column 3 of Oki.

Response to Arguments

Applicant's arguments, see Remarks pages 2-8, filed 9/11/2006, with respect to the rejection(s) of claim(s) 1-5 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a new-found reference, Oki et al (U.S. Patent 4825249). Oki et al, in combinations with Cahill, Limerkens, and Suzuki, present a new prima facie case for obviousness.

While applicant's argument regarding the primary reference, Sasame, is persuasive, arguments regarding the secondary references are not persuasive.

Applicant argues that blown hot air (claim 1) is not taught by Cahill and, therefore, this limitation is not addressed. Applicant also alleges that a surface impregnation (claim 1) resulting in a cured layer, as opposed to a distributed impregnation, is a claimed limitation that is also not met by Cahill.

Regarding blown hot air, Cahill teaches a hot air cure at lines 55-57 in column 2, and further describes a rapid removal of excess material at lines 1-5 in column 5. It would have been obvious to one of ordinary skill to combine these teachings into a "blown hot air" technique. Regarding surface impregnation, applicant is advised that the broad language of claim 1, wherein stated: "at least part of the surface portion...", does not preclude impregnation of other parts, or of the whole body in a distributed manner. Furthermore, applicant has not offered evidence that the process of Cahill does not result in a cured layer, as suggested.

Applicant argues that the water content (claim 4) taught by Limerkens was designed for a different functional system than that anticipated by the claim, and that the scope of Limerkens, directed to microcellular elastomers, is different than that of the present application.

In response, notwithstanding the applicant's intent, claim 4 has no limitation that restricts a compositional boundary beyond a urethane resin with water content, and therefore the functional system is not given weight. Regarding scope, the Limerkens reference shares relativity to urethane compositions.

Applicant argues that Suzuki teaches using ammonia to neutralize carboxyl groups (claim 5), and not the unreacted isocyanate, as claimed. Applicant further argues that scope is disparate.

In response, Suzuki does teach using a compound with two active hydrogens in combination with polyisocyanate. See lines 34-40 in column 6. Regarding scope, the Suzuki reference shares relativity to urethane compositions.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to further show the state of the art with regard to cleaning blades:

U.S. Patent Application Publication 2002/0192430 to Miura et al

U.S. Patent Application Publication 2003/0081971 to Nakayama

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Lambelet whose telephone number is 571-272-1713. The examiner can normally be reached on 8 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEL
11/21/2006


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11/24/06